IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Docket No: Q77576
Yung-lyul LEE, et al.	
Appln. No.: 10/669,709	Group Art Unit: 2621
Confirmation No.: 6387	Examiner: Gims S. Philippe
Filed: September 25, 2003	

For: SIGNAL ADAPTIVE FILTERING METHOD, SIGNAL ADAPTIVE FILTER AND
COMPUTER READABLE MEDIUM FOR STORING PROGRAM THEREFOR

SUBMISSION OF APPEAL BRIEF

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. The USPTO is directed and authorized to charge the statutory fee of $540.00 and all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/ S. Stuart Lee /

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: August 4, 2009

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S. Stuart Lee
Registration No. 61,124

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APPEAL BRIEF UNDER 37 C.F.R. § 41.37

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Sir:

　　　In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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I.   REAL PARTY IN INTEREST

The real party in interest is SAMSUNG ELECTRONICS CO., LTD., (Assignee) by

virtue of an assignment executed by Yung-Lyul Lee and Hyun-Wook Park on February 29, 2000,

and recorded by the Assignment Branch of the U.S. Patent and Trademark Office, on April 12,

2000, in parent application no. 09/462,805, on Reel/Frame No. 010734/0362.

II.   RELATED APPEALS AND INTERFERENCES

To the knowledge and belief of Appellants, the Assignees, and the undersigned, there are

no other appeals or interferences before the Board of Appeals and Interferences that will directly

affect or be affected by the Board's decision in the instant Appeal.

III.   STATUS OF CLAIMS

Claims 1-6 and 8-25 are pending in the application.

Claims 1, 4 and 14-25 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,787,204, hereinafter "Fukuda".

Claims 2, 3, 5, 6, and 8-13 are allowed.

Claims 1, 4, and 14-25 are on appeal.

IV.   STATUS OF AMENDMENTS

The Amendment filed on July 1, 2008, has been entered by the Examiner, pursuant to the

Final Office Action dated October 21, 2008.

V.   SUMMARY OF THE CLAIMED SUBJECT MATTER

An exemplary embodiment of the claimed invention is set for below, with reference to the specification and drawings. All page and paragraph references are to the original specification filed prior to any Amendments, unless otherwise noted.

Claim 1:   An image data filtering method for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size (see e.g., p. 2, lines 19-21), the method comprising: checking whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not (see e.g., p. 7, lines 18-20); generating filtering information on whether the data block requires filtering depending on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not (see e.g., p. 7, lines 18-26); and filtering the data block passed through inverse quantization and inverse transform according to the generated filtering information (see e.g., p. 7, lines 10-12).

Claim 4:   An image data filtering apparatus for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size (see e.g., 2, lines 19-21), the apparatus comprising: a checking unit to check whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not (see e.g., p. 6, lines 14-23); a generating unit to generate filtering information on whether the data block requires filtering depending on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not (see e.g., p. 6, lines 14-23); and a filtering unit to filter the

data block passed through inverse quantization and inverse transform according to the generated

filtering information (see e.g., p. 6, lines 13-27).

Claim 14:   The method of claim 1, wherein the predetermined region includes a

predetermined number of pixels and the predetermined region is smaller than the data block (see

e.g., p. 7, lines 18-21).

Claim 15:   The apparatus of claim 4, wherein the predetermined region includes a

predetermined number of pixels and the predetermined region is smaller than the data block (see

e.g., p. 6, lines 14-18).

Claim 16:   An image data filtering method for reducing blocking effect and noise

when a frame of the image data is composed of data blocks of predetermined size, the method

comprising (see e.g., p. 2, lines 19-21): checking whether all coefficients of all pixels in a

predetermined region of the data block are equal to zero or not (see e.g., p. 7, lines 18-20);

generating information indicating whether the data block requires filtering, based on whether the

all coefficients of all pixels in the predetermined region of the data block are equal to zero or not

(see e.g., p. 7, lines 18-26); and filtering the data block passed through inverse quantization and

inverse transform according to the information, if the information indicates that the data block

requires filtering (see e.g., p. 7, lines 10-12).

Claim 17:   The method of claim 16, wherein if the information does not indicate that

the data block requires filtering, the data block is not filtered (see e.g., p. 7, lines 10-12).

Claim 18:   An image data filtering apparatus for reducing blocking effect and noise

when a frame of the image data is composed of data blocks of predetermined size, the apparatus

comprising (see e.g., p. 2, lines 19-21): a checking unit to check whether all coefficients of all

pixels in a predetermined region of the data block are equal to zero or not (see e.g., p. 6, lines

14-23); a generating unit to generate information indicating whether the data block requires

filtering, based on whether the all coefficients of all pixels in the predetermined region of the

data block are equal to zero or not (see e.g., p. 6, lines 14-23); and a filtering unit to filter the

data block passed through inverse quantization and inverse transform, if the information

indicates that the data block requires filtering (see e.g., p. 6, lines 13-27).

Claim 19:   The apparatus of claim 18, wherein if the information does not indicate

that the data block requires filtering, the data block is not filtered (see e.g., p. 7, lines 10-12).

Claim 20:   The method of claim 16, wherein the predetermined region includes a

predetermined number of pixels and the predetermined region is smaller than the data block (see

e.g., p. 7, lines 18-21).

Claim 21:   The method of claim 16, wherein the predetermined region is not square

shaped (see e.g., p. 7, lines 18-20; Fig. 3).

Claim 22:   The apparatus of claim 18, wherein the predetermined region includes a

predetermined number of pixels and the predetermined region is smaller than the data block (see

e.g., p. 6, lines 14-18).

Claim 23:   The apparatus of claim 18, wherein the predetermined region is not square

shaped (see e.g., p. 7, lines 18-20; Fig. 3).

Claim 24:   The method of claim 1, wherein the predetermined region is not square

shaped (see e.g., p. 7, lines 18-20; Fig. 3).

Claim 25:   The apparatus of claim 4, wherein the predetermined region is not square

shaped (see e.g., p. 7, lines 18-20; Fig. 3)

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VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Applicant respectfully submits that claim 1 is patentable because each and every element

of the claim is not disclosed by Fukuda. Claim 1 recites (emphasis added):

> An image data filtering method for reducing blocking effect and noise
> when a frame of the image data is composed of data blocks of predetermined
> size, the method comprising:
>
> checking whether all coefficients of all pixels in a predetermined region of
> the data block are equal to zero or not;
>
> generating filtering information on whether the data block requires filtering
> depending on whether the all coefficients of all pixels in the predetermined region
> of the data block are equal to zero or not; and
>
> filtering the data block passed through inverse quantization and inverse
> transform according to the generated filtering information.

In the Amendment of July 1, 2008, Applicant submitted that Fukuda fails to disclose or

suggest, inter alia, checking whether all coefficients of all pixels in a predetermined region of the

data block are equal to zero or not, in combination with other elements of the claim.

Fukuda fails to disclose or suggest any sort of predetermined region of the data block, in

the manner recited in the claim. In the section of Fukuda cited by the Examiner, Fukuda merely

discloses that one 8x8 block has 4x4 pixels which are non-zero (Fig. 10A), while the next block

has 3x3 pixels which are non-zero (Fig. 10B). Therefore, Fukuda cannot possibly disclose

checking the coefficient of pixels in a predetermined region because the variable size of the

pixels which have non-zero coefficients, precludes checking a predetermined region.

Rather, the 4x4 pixels in Fig. 10A and the 3x3 pixels in Fig. 10B merely reflect the consequence of the disposition of the non-zero coefficients and the 4x4 or 3x3 pixels do not represent any predetermined region where any sort of checking is done.

In response to the above, the Examiner maintains the rejection of the claims in the Final Office, that Fukuda discloses checking whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not. In the Final Office Action, the Examiner also cites column 7, lines 51-67 and alleges that the regions of 4x4, 3x3 and 1x1 in Fig. 14A correspond to the claimed predetermined region.

The above cited sections of Fukuda, however, disclose determining the location of the non-zero coefficients and discloses the 4x4, 3x3 and 1x1 regions which were determined to have non-zero coefficients. While Fukuda may disclose determining the location of the non-zero coefficients, the reference only shows determining where the non-zero coefficients are located in the entire 8x8 DCT block, and not in a predetermined area. Therefore, Applicant respectfully submits that Fukuda still fails to disclose checking whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not.

Moreover, claim 1 recites three elements therein, three elements which are carried out in a particular order. Claim 1 recites checking, generating, and then finally, filtering. Therefore, the Examiner cannot argue that Fukuda discloses the three steps of claim 1 in a different order.

Applicant submits that the generating filtering information is carried out based on the checking of coefficients and subsequently, the filtering the data block is based on the previously recited element of generating filtering information.

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Therefore, for at least the above reasons, claim 1 is patentable.

Claims 4, 16 and 18 are patentable for reasons similar to those submitted for claim 1.

Claims 15, 17 and 19, which respectively depend from claim 4, 16 and 18, are patentable at lest by virtue of their dependencies.

Claims 20-25 are patentable at least by virtue of their dependencies from their respective base claims.

In addition, claims 20 and 22 are further patentable because Fukuda fails to disclose a method wherein the predetermined region includes <u>a predetermined number of pixels</u> and the predetermined region is <u>smaller</u> than the data block.

Moreover, claims 21, 23-25 are additionally patentable because Fukuda fails to disclose a method wherein <u>the predetermined region is not square shaped</u>.

For at least the foregoing reasons, Applicants submit that the present invention is patentable, and allowance of the application is respectfully requested.

VII.   ARGUMENT

The USPTO is directed and authorized to charge the statutory fee (37 C.F.R. §41.37(a)

and 1.17(c)) and all required fees, except for the Issue Fee and the Publication Fee, to Deposit

Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

/ S. Stuart Lee /

SUGHRUE MION, PLLC   S. Stuart Lee
Telephone: (202) 293-7060   Registration No. 61,124
Facsimile: (202) 293-7860

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CLAIMS APPENDIX

CLAIMS 1, 4 and 14-25 ON APPEAL:

1.   An image data filtering method for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the method comprising:

checking whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not;

generating filtering information on whether the data block requires filtering depending on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not; and

filtering the data block passed through inverse quantization and inverse transform according to the generated filtering information.

4.   An image data filtering apparatus for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the apparatus comprising:

a checking unit to check whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not;

a generating unit to generate filtering information on whether the data block requires filtering depending on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not; and

a filtering unit to filter the data block passed through inverse quantization and inverse

transform according to the generated filtering information.

14.   The method of claim 1, wherein the predetermined region includes a

predetermined number of pixels and the predetermined region is smaller than the data block.

15.   The apparatus of claim 4, wherein the predetermined region includes a

predetermined number of pixels and the predetermined region is smaller than the data block.

16.   An image data filtering method for reducing blocking effect and noise when a

frame of the image data is composed of data blocks of predetermined size, the method

comprising:

checking whether all coefficients of all pixels in a predetermined region of the data block

are equal to zero or not;

generating information indicating whether the data block requires filtering, based on

whether the all coefficients of all pixels in the predetermined region of the data block are equal

to zero or not; and

filtering the data block passed through inverse quantization and inverse transform

according to the information, if the information indicates that the data block requires filtering.

17.   The method of claim 16, wherein if the information does not indicate that the data block requires filtering, the data block is not filtered.

18.   An image data filtering apparatus for reducing blocking effect and noise when a frame of the image data is composed of data blocks of predetermined size, the apparatus comprising:

a checking unit to check whether all coefficients of all pixels in a predetermined region of the data block are equal to zero or not;

a generating unit to generate information indicating whether the data block requires filtering, based on whether the all coefficients of all pixels in the predetermined region of the data block are equal to zero or not; and

a filtering unit to filter the data block passed through inverse quantization and inverse transform, if the information indicates that the data block requires filtering.

19.   The apparatus of claim 18, wherein if the information does not indicate that the data block requires filtering, the data block is not filtered.

20.   The method of claim 16, wherein the predetermined region includes a predetermined number of pixels and the predetermined region is smaller than the data block.

21.   The method of claim 16, wherein the predetermined region is not square shaped.

22.   The apparatus of claim 18, wherein the predetermined region includes a

predetermined number of pixels and the predetermined region is smaller than the data block.

23.   The apparatus of claim 18, wherein the predetermined region is not square

shaped.

24.   The method of claim 1, wherein the predetermined region is not square shaped.

25.   The apparatus of claim 4, wherein the predetermined region is not square shaped.

EVIDENCE APPENDIX:

None.

<u>RELATED PROCEEDINGS APPENDIX</u>

None.